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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:
Fred Christian Baij

Serial Number: 09/535,457

Filed: March 24, 2000

For: FRAMING LUMBER PRODUCTS AND METHODS

Group Art Unit: 3637

Examiner: Chi Q. Nguyen

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APPEAL BRIEF

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

ATTENTION: Board of Appeals and Interferences

APPELLANTS' BRIEF (37 CFR §1.192)

This appeal brief is submitted in furtherance of the Notice of Appeal filed on June 19, 2002 in the above identified application.

08/29/2002 MBYARS 09/535,457
01 FC:220 order set forth below (37 CFR §1.192(c)):

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE AS FIRST CLASS MAIL IN AN ENVELOPE ADDRESSED TO ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231

ON August 19, 2002.

Thomas D. Wilhelm

(Typed name of person mailing paper or fee)

Thomas D. Wilhelm
(Signature)

August 19, 2002
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I. REAL PARTY IN INTEREST (37 CFR §1.192(c)(1))

This application is not assigned. Accordingly, the real party in interest is the inventor, Fred Christian Baij.

II. RELATED APPEALS AND INTERFERENCES (37 CFR §1.192(c)(2))

There are no other appeals or interferences known to appellants' representative that are related to the instant patent application.

III. STATUS OF CLAIMS (37 CFR §1.192(c)(3))

The status of claims in this application is:

The claims in the application are Claims 1-75. Of these, Claims

31-64 are canceled;

none are withdrawn from consideration;

1-30, 65-75 are pending;

none are allowed; and

1-30, 65-75 are rejected.

The claims on appeal are Claims 1-30 and 65-75.

IV. STATUS OF AMENDMENTS (37 CFR §1.192(c)(4))

The amendment filed 22 January, 2001, was entered in response to a first Office Action.

According to the Advisory Action mailed 08/02/02, the amendment filed 3 July, 2002, will be entered for purposes of Appeal.

The status of the amendment filed 7 August, 2002, which amended only Claim 1, is not known. In that regard, the following arguments address Claim 1 both with and without the 7 August, 2002 amendment.

V. SUMMARY OF INVENTION (37 CFR §1.192(c)(5))

The present invention shown in FIGURES 1-6 is mainly described at page 13 lines 11-24; at page 14 line 35 to page 15 line 5; at page 15 lines 19-22; at page 16 lines 29-31; at page 17 lines 23-34; at page 18 line 25 to page 19 line 3; and at page 19 lines 18-27; and at page 21 lines 6-14.

Generally, the invention comprehends framing lumber products such as dimensioned wood boards having stud locator markings spaced along lengths of the boards. Referring to FIGURE 6, markings (12) on the marked lumber assist in layout and assembly of an otherwise conventional frame wall comprising bottom plate (10BP), top plate (10TP), and a plurality of studs (24) extending between the bottom and top plates; wherein the ends of the studs are to be positioned at one or more of a limited number of regularly-spaced pre-determined stud spacings along the plates. Typical application of the invention is to use, as the top and bottom plates, respective pieces of the lumber bearing such markings.

As shown in, for example, FIGURES 1-3 and 6, stud locator markings (12) define positions for placement, on the respective plate, of the ends of the studs which are to be mounted against the respective bottom plate or top plate. Typical such stud locator markings indicate where front (22F) and back (22B) surfaces of the studs are to intersect the respective plate (10). The stud markings (12) are spaced along the bottom plate (10BP) and along the top plate (10TP), at one or more of the pre-determined stud spacings. Preferred spacings for stud markings (12) are 8 inches, optionally 16 or 24 inches. The 8-inch spacing enables the user to select spacings at

any multiple of 8 inches. This is especially useful because standard spacings in the industry are 16 inches and 24 inches, both of which are multiples of 8 inches.

It is well known that construction materials receive rough mechanical treatment at construction sites.

Each stud marking comprises marking material, for example ink, affixed directly to the respective piece of lumber (10) (FIGURES 1-3), or a shallow cut or impression in the piece of lumber (FIGURE 4). By affixing the marking material directly to the lumber, e.g. by printing directly onto the lumber, such that the lumber is the substrate, the affinity between the mark and the lumber is increased over any marking material which is carried by a secondary substrate, which secondary substrate is in some fashion affixed to the piece of lumber. Indeed, where the substrate is porous, e.g. wood, typical marking material such as ink penetrates below the outer surface of the wood, into the pores of the substrate where the marking material is even more resistant to removal during the above noted typical rough mechanical treatment. Even where a more viscous material such as a grease-based product or wax-based product is used, such material is known to penetrate below the outer surface of wood - whereby the resulting marking is again amenable to effective application in a rough-use environment.

Thus, in lumber pieces of the invention, the position of the marking material, and the integrity of the marking material in combination with the piece of lumber, are typically not affected by the level of rough mechanical handling to which lumber is commonly treated at a construction site. By contrast, in prior art use of marking materials applied to a secondary substrate such as masking tape, such rough mechanical treatment can be effective to tear off or otherwise remove the secondary substrate, thereby obviating any value in the so-removed marking material.

VI. ISSUES (37 CFR §1.192(c)(6))

The only issue in this appeal is whether the rejection of Claims 1-30 and 65-75 under 35 U.S.C. §103(a) as being unpatentable over Varoglu (US 5,782,054) in view of Thomas (US 4,845,858) is proper.

VII. GROUPING OF CLAIMS (37 CFR §1.192(c)(7))

Claims 1-11 and 65-75 stand or fall together as a single group directed to a bundle of framing lumber product

Claims 12-30 stand or fall together as single group directed to individual pieces of framing lumber product.

VIII. ARGUMENTS (37 CFR §1.192(c)(8))

Claims 1-30 and 65-75 stand rejected under 35 U.S.C. §103 (a) as being unpatentable over Varoglu et al (US 5,782,054) in view of Thomas (US 4,845,858).

Varoglu teaches a rather unconventional framing structure which uses dimension lumber in combination with a sheathing layer (plywood or oriented strand board) mounted in the interior of the framing wall. This is accomplished by rotating the vertical 2x4 studs, which are 3½ inches wide, by 90 degrees with respect to conventional orientation in a 3½ inch stud wall. The resulting structure uses the 1½ inch thickness of a 2x4 stud on each side of the ½ inch thick sheathing, thus to fill the 3½ inch widths of the upper and lower plates. Thus, rotating the studs makes room in the 3½ inch thickness of the framing wall for the ½ inch thickness of the sheathing member. Elongate slots are cut along the lengths of the top and bottom plate members, to receive and position the ½ inch thick sheathing member.

Thomas teaches tape, such as a roll of masking tape, printed with desired stud locator markings. The tape is indicated as masking tape (column 1 line 67). The tape is adhesively secured to the top and bottom plates (column 1 line 68 to column 2 line 4), to thus indicate proper stud spacing.

The examiner appropriately acknowledged at page 2 of the Official Action dated 4/24/02 that Varoglu does not disclose stud locator markings as recited in each of the claims at issue.

The examiner then asserted that it would have been *obvious to combine Varoglu's lumber construction with using Thomas' stud locating tape*. The asserted

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motivation "would have been to provide constructors more accuracy of placement of the studs into top and bottom plates thus it could minimized the installation time and cost saving." Applicant respectfully adds the objective of dependability, reliability of location of the markings at the time the studs are assembled into the frame.

It Would Not Have Been Obvious to Combine the References

While the examiner has asserted the obviousness to combine, the examiner has shown no motivation to combine, other than hindsight reconstruction. The examiner has not referred to any motivation enunciated in any reference. Indeed, even a casual review of the references shows that the tapes of Thomas are printed for studs where the widths of the studs extend along the 3½ inch width of the wall being framed, while the Varoglu structure requires that the widths of the studs be oriented along a longitudinal length of the wall being framed. Thus, it is clear, from even a casual observation, that the tape of Thomas cannot simply be combined into Varoglu to arrive at an improved product. Rather, the printing has to be re-formatted from 1½ inches width of a given stud marking to 3½ inches width of a given stud marking. Thus, there is indeed a negative motivation - to not combine Thomas and Varoglu.

However, since the examiner has asserted that it would have been obvious to combine Varoglu and Thomas, let's take a look at what happens if we make such a combination. Unfortunately, the examiner doesn't tell us much about the combination, so any analysis, to be instructive, will have to consider a number of possibilities and the respective results.

Referring to Thomas at FIGURES 2 and 4, we start with the understanding that the respective framing members (studs and plates) are to be joined to each other in generally abutting relationship to make a strong rigid assembly. In that respect, each end of each stud is to be in high friction, intimate surface-to-surface contact with the respective surfaces of the top and bottom plates, with no gaps, and no movement, between the studs and plates. Such assembly can be described as a force-fitted assembly, wherein there is substantial ongoing stress at the interfaces between ends of the studs and respective faces of the plates.

Turning again to FIGURES 2 and 4, tape 22 runs the full lengths of both the bottom plate and the top plate, on the surfaces which respectively face upward and

downward. These are the surfaces onto which the vertical studs are to be attached to the top and bottom plates. Accordingly, the thickness of the tape is a factor in both lengths of the vertical studs, and in the role played by friction fit of the studs in securing the vertical studs in abutting relationship with the top and bottom plates. When the tape is applied to the plates, the tape interferes with direct surface-to-surface contact between stud and plate, whereby the typical role of friction in framing walls is usurped, negated, by use of the tape. Thus, if the tape survives the construction process, and sometimes it does not, the tape interferes with the normally-expected surface-to-surface structural relationships between plates and studs.

Of the tapes taught in Thomas, only the 1.5 inch tape can be used without interfering with groove 14. Typically, the tape would have to be used on both sides of the groove to enable installing the sheathing before installing any of the studs, while suitably instructing placement of the studs opposite each other as shown in FIGURES 2 and 5. Indeed, the tape option is unlikely to be cost effective, whereby there would be no motivation to combine because of cost factors.

Assuming the tape of Thomas is used in spite of being uneconomical, the tape as illustrated in Thomas, is not properly printed to be used with vertical studs which are oriented with the width of the stud extending the length of the wall. So the Thomas tape, as taught in the reference, is not suitable for use directly with Varoglu. Applicant suspects it will be the examiner's position that it would be obvious to print the Thomas tape to accommodate the studs in Varoglu. Again, applicant traverses. Certainly, it might have been *obvious to try* a combination of Thomas and Varoglu. It might have been *obvious to try* changing the print pattern on the tape of Thomas. But Thomas provides no insight into patterns not illustrated. It is well established law that *obvious to try* does not suffice to defeat patentability.

Further, looking at all the references of record, not just Thomas and Varoglu, where is the instance of motivation to cause one to obviously select Thomas and Varoglu, and to make a combination of these two references, and not another 2 references? Why not combine Thomas with another reference? Why not combine Varoglu with Liang? Certainly Liang provides means to locate vertical studs. But again not in the orientation desired in Varoglu. So, if Thomas is obvious, why not Liang?

Again, suppose for sake of argument that one does find it obvious to combine Thomas and Varoglu (applicant does not concede such combination as obvious). What does one end up with when the combination is made?

In assessing the result, applicant submits that it is not proper for the examiner to go beyond the four corners of the teaching of the reference. Further, applicant submits that it is not proper for the examiner to assert obvious to combine two references, and then assert further obviousness to make still further changes to the resultant combination of the references. Applicant acknowledges that the examiner can assert an obvious change to a reference, or can assert that it is obvious to combine references where there is proper motivation. However, applicant also submits that it is improper for the examiner to assert multiple levels of obviousness, wherein a second level of asserted obviousness, such as changing the print pattern, is built on a first level of asserted obviousness, such as combining two references. Stated another way, the examiner may not assert an obvious combination of references and, in addition, assert that it would have been obvious to modify one of the combined references.

The Print Pattern Cannot be Used as Disclosed by the Thomas Reference.

On its face, what the examiner has done is to assert that it would have been obvious to combine Thomas and Varoglu (change 1), and has then asserted that certain modifications, such as the print pattern (change 2), to that *obvious* combination would have been obvious (Official Action 04/24/02 page 3 line 8). Indeed, the examiner is correct that additional changes would be required in order to arrive at the claimed invention. But such stacking of obviousness assertions is proscribed in the law, and is ordinarily an indicator of hindsight reconstruction, which is proscribed.

Combination of Varoglu and Thomas Fails to Achieve Asserted Objectives.

Turning to the applied references, Thomas suggests that his tape be e.g. 1.5 inches, 3 inches, or 5 inches wide (column 1 line 67). Let's analyze. If the tape is 3 inches wide or 5 inches wide, and is mounted only on the plate surface which faces the studs, as shown in Thomas, the tape overlies the groove 14 and interferes with installation of the sheathing. The 3 inch tape and the 5 inch tape won't work

according to the teaching of Thomas. Certainly, the 3 inch and 5 inch tapes can be installed with a tape edge against the groove (14), with the remainder of the tape overlying an adjacent edge, and optionally back, of the plate. Corresponding tapes would have to be used on both sides of groove (14). But such application would be both costly and wasteful of material, and would be more difficult to install than the 1.5 inch wide tape. Therefore, it is not obvious to use the 3 or 5 inch tapes.

Asymmetric Height of the Opening

If the tape is 1.5 inches wide, and assuming a print pattern compatible with the Varoglu structure, which Thomas does not illustrate, the tape can in fact be applied on the top and bottom plate, or both, on one side of groove 14, or on both sides of groove 14. However, the thickness of the tape does change the effective open distance between top and bottom plates. In such instance, if all vertical studs are cut to the same length, the studs on one side of the sheathing, fit tighter than on the other side, leading to asymmetric loading of the frame and a tighter fit on the side bearing the tape. In order to provide symmetric loading of the frame, the studs on one side would have to be cut incrementally longer/shorter than on the other side. This makes for added complexity of the design, and added complexity of the building assembly process. Again an undesirable result, whereby the combination would not have been obvious to one of ordinary skill in the art.

What if the tape is applied on both sides of the groove? This does solve the disparate length problem. But Thomas does not teach side-by-side tapes, so such structure is beyond the teaching of the reference. Even so, where a second tape is used, and where the tape, in the finished frame, is between the plate and an end of the stud, the tape substrate can serve as a nexus of enabled movement and sliding of the stud relative to the plate, whereby some of the typical frictional benefits of the stud/plate surface-to-surface interface are defeated. Such issues can lead to less accuracy, more installation time to re-work defective assemblies, and more associated cost. So, even assuming one does find potential benefit in the combination, there are also quite valid negative indications whereby the net result is not obviously positive. obvious to try - perhaps. Obvious to do - NO!

Application on both sides further presents the problem of registering the two tapes with respect to each other. Again, a complexity is added, which would

discourage one from using two tapes, whereby the combination would not have been obvious.

Fabricating Complexities

In addition, in such Varoglu/Thomas combination, one would have to fabricate the groove before installing the tape, lest the cutting of the groove remove, dislocate, or damage or move the tape.

Yet further, the tape as disclosed in Thomas cannot be applied, as a single strip, across the full width of the lumber piece, as such use of the tape would overlie, and thus interfere with use of, groove 14. Turning to the process of constructing the frame of Varoglu, sheathing 16 must be installed at least before all of the studs are installed. In the most obvious process of assembling a frame as illustrated in Varoglu, one installs sheathing 16 in the plates before any of the studs are installed; and subsequently install the studs. In such case, the Thomas tape, if used, must be installed before the sheathing is installed, in order to ensure alignment of the studs across from each other on opposing sides of the sheathing. Such use also requires installation of two tapes, one on each side of groove 14. Such dual installation increases the cost. Further, the markings on the 2 tapes have to be registered to each other, potentially detracting from overall accuracy, adding to time, and adding to cost. Again, the required assembly processes work against the examiner's stated objectives, as well against predictability.

Referring yet to Thomas, groove 14 of Varoglu would have to be fabricated before the tape is applied, lest the cutting of the groove remove, dislocate, or damage the tape. Indeed, cutting or other fabrication of the piece of lumber after the tape bearing the markings is applied is strictly limited, since any such fabrication runs severe risk of dislocating or damaging the tape.

By contrast, in the invention where the markings are applied directly to the lumber, the piece of lumber can be cut, sized, and otherwise dimensionally fabricated after the markings are in place on the piece of lumber, usually without any risk of dislocating or damaging the markings as to the piece of lumber which is ultimately used.

The Thomas Tape is Mobile After Installation

Applicant wishes to draw attention to a further topic related to the Thomas teaching. Namely, Thomas teaches use of masking tape as a medium for applying marking to pieces of framing lumber. It is well known that masking tape comprises a paper-like substrate, coated on one surface with a coating of adhesive. It is also well known that masking tape adhesive is somewhat mobile. Namely, one can apply masking tape to a surface and, while the tape does not volunteer to move, the tape can be moved small distances, especially if one does not take special care in initially firmly bonding all areas of the tape to the underlying surface.

Making The Thomas Tape Work Is Difficult

Thomas teaches obtaining his tape in the form of a commercially available rollable masking type tape base...adhesively secured to the... bottom...[and] top plate[s]...prior to stud assembly. Namely, the tape is to be applied at the construction site.

It is well known that construction sites are dirty and/or dusty, can be wet or damp, that oil may be spilled on a piece of wood on the construction site. It is known that respective construction materials can, and sometimes are, also quite dirty and/or dusty, wet, damp, or oily. In that context, where the piece of lumber to which the tape is to be applied is dusty and/or dirty, wet, damp, or oily, the process of applying the tape to the lumber is hindered by the dust/dirt, wet, damp, or oil, which can interfere with good adhesion. Certainly, the user can first attempt to clean or dry the plate. But that extra step, which may or may not be successful, runs counter to the objectives for cost reduction and minimizing installation time. Assuming the tape is applied in such dirty or wet or damp or oily environment, whether the plate is cleaned first or not, there is a reasonable prospect that the tape could be inadvertently moved, misplaced after being applied to the piece of lumber.

Assuming the tape is successfully applied to the plate, we next consider the process of attaching a stud to such plate. Such attaching process is generally stressful on both the stud and the plate in order to get a properly stressed friction fit. For example, where the stud/plate combination is partially constructed, and a stud is

to be added to the partial assembly, it is quite common that the stud might fit a little tight, or a little loose, for example where one of the plates is not perfectly straight or where a stud is a little long, or a little short. Indeed, minor length variations are common, and are expected, in such projects. In such instance, e.g. a stud which is a little bit long is forced side-ways into its proper place. The same is true where a plate is bowed or twisted. The stud is placed, with one end at the marked place on e.g. the lower plate, and the upper end of the stud is placed against the upper plate as close as possible to the location indicated by the markings on the tape, with the end of the stud positioned in frictional engagement against the outer surface of the tape. Thus, the tape is between the end of the stud and the respective surface of the plate. The stud can then in theory be e.g. hammered or otherwise forced sideways until the upper end of the stud reaches the proper position.

But NO!..... It doesn't work that way! As the upper end of the stud is forced sideways, the end of the stud is sliding on the rather rough, creped outer (substrate) surface of the tape, with increasing levels of friction/force between stud and plate. Thus, progressive movement of the stud toward the marked position applies progressively increasing force at the interfacing surfaces of stud and plate. Thus, the closer the stud gets to the marked location, the greater the force at the stud/plate interface, exerting a side load against the respective surface of the plate and a longitudinal load along the length of the stud. In the environment of such static load between plate and stud, the forced side-ways movement of the stud, along the surface of the plate with which it is in such frictional engagement, with the tape between the stud and plate, transfers that force to the tape. The tape between stud and plate needs to move in order to avoid being torn. But the tape trailing the direction of movement of the stud is bonded to the plate. And the force required to break the adhesive bond so the tape can move is greater than the strength of the tape. So, as increasing force is applied to the tape as the stud moves, the internal force distribution in the tape, which accompanies the force effecting sideways movement of the stud, becomes so concentrated in the tape closely behind the trailing surface of the moving stud end that the tape breaks.

Markings of Thomas Can Move Ahead of the Stud as the Stud is Being Installed

In addition to the tape breaking, and even more destructive of the intended use of the Thomas tape, as the stud is forced sideways, the force/friction between stud and plate, squeezes the tape between stud and plate, overcomes the adhesion between tape and plate and thus pushes the now-torn tape ahead of the stud, in the direction of movement of the end of the stud. The greater the distance the stud moves, the greater the quantity of tape which is being pushed ahead of, and bunching up in front of, the end of the stud. As the end of the stud approaches the markings which indicate the target location of the stud, the section of the tape bearing such markings is also pushed ahead, and becomes a part of the "bunched-up" tape moving ahead of the stud.

But any movement of the tape section bearing the target markings defeats the examiner's stated objectives (accuracy, time savings, cost savings), of having the target markings at a pre-determined location. When the markings move, the user has no reliable target. Applicant submits that the combination also fails to fulfill the further objective of dependability, reliability of the markings to every time indicate, to the assembly crew, the proper location of each and every stud until such time as such stud is fully positioned at the proper location on the plate, and assembled into the frame.

While applicant acknowledges that the above sequence of events may occur infrequently, even such infrequent occurrence is unacceptable because structural integrity of building construction depends on accurate assembly of all the respective elements of the frame; and the purpose of having the markings of interest is to ensure accurate assembly of the frame.

The above friction, and tearing and pushing of the tape, are even more pronounced when applied to the Varoglu structure where the studs are rotated 90 degrees such that the stud ends are force-moved in directions along the 3½ inch widths of the studs, rather than the 1½ inch thicknesses as shown in Thomas.

The Combined References Do Not Arrive at the Claimed Invention

So far, applicant has argued that the examiner's assertion that it would have been obvious to combine Varoglu and Thomas is defective, that it would not have been obvious to combine the references, and that such combination does not achieve the recognized objectives. And applicant is firmly of the conclusion that it would not have been obvious to one of ordinary skill in the art to combine Varoglu and Thomas.

But suppose applicant is mistaken? Suppose it is truly obvious to combine the references as asserted by the examiner? Does one then end up with the claimed invention? Applicant submits that the answer is a clear NO.

As implicitly acknowledged by the examiner, all claims require that the marking be positioned directly on the respective piece of lumber. Further, Claims 1 and 65 specify that the marked lumber pieces are comprised in a bundle of lumber. The examiner seems to imply that having the marking material directly on the piece of lumber is no more than a mere rearrangement of parts. That is not true.

The examiner seems to imply that a bundle of lumber, containing lumber bearing such markings would be obvious. That is not true.

To the contrary, placing the marking directly on the piece of lumber removes a number of negative factors extant in the way the tape of Thomas operates. First, in the invention, the cost of achieving marked lumber is greatly reduced. The tape substrate is eliminated. The process of adding the markings to the lumber can be automated. The process of placing the markings on the lumber can be located away from the construction site, at a lower-cost manufacturing site.

Second, the length issues discussed above are avoided.

Third, the normal abutting frictional values are preserved. Fourth, any tendency for tape adhesive to slip on the plate, thus to either mis-mark the plate, or to cause movement of the stud during or after assembly is avoided. Fifth, any risk that the tape be removed, e.g. during rough handling, is avoided.

Applicant submits that the above differences arise to much more than mere rearranging of parts. Rather, the invention constitutes various differences, indeed improvements, in function, providing the marking features desired in Thomas while avoiding the disadvantages of Thomas.

The examiner explicitly states that it would have been obvious to combine Varoglu's lumber construction with Thomas' tape. Applicant reads into that statement the implied conclusion "so as to arrive at the claimed invention." However, such implied conclusion is incorrect. By contrast, the combination still has the markings on the tape, not on the lumber. The examiner has suggested no teaching, no motivation, no suggestion, which makes the change from printing on the tape to printing on the lumber, or which makes obvious such change.

Thus, even allowing full benefit for the combined teachings of Varoglu and Thomas (applicant asserts such combination is not proper under the law) still does not yield the invention, wherein the markings are directly on or in the lumber pieces.

Since the examiner has failed to make a *prima facie* showing of obviousness, applicant submits that the examiner has failed to carry his burden of persuasion; and that the claims are thus allowable over the references of record. 35 U.S.C. 102 "A person shall be entitled to a patent unless...."

The Invention Operates Differently, Solves the Deficiencies of the References

So how does the invention avoid the above problems, and thus provide a different-in-kind function? With the markings disposed directly on the plate lumber piece, as in the invention, no amount of forced movement of the end of the stud, even under longitudinal loading of the stud, even where the stud is rotated 90 degrees as in Varoglu, is effective to fully displace the markings, short of structural damage to the plate in the process of such assembly.

Certainly, surface colorant may be wiped/scraped off the plate by the frictioned sliding of the stud end against the plate surface. But that portion of the colorant or other marking which is positioned below the outer surface of the lumber piece remains in place to indicate the target location for the stud end. No matter how much force has to be used to properly position the stud, those portions of the markings which are positioned below the outer surface do not move; and the markings are not destroyed. Indeed, the markings of the invention are effective under all normal use conditions which do not damage the structural integrity of the plate.

Overall, the deficiencies of the references have been favorably resolved in the invention.

It makes no difference if the marked lumber gets dirty/dust.

It makes no difference if the marked lumber has a wet surface

It makes no difference if oil is spilled on the lumber.

It makes no difference if the lumber is wet from exposure to the elements at the construction site.

Normal cutting and other sizing of the lumber can be routinely practiced with the markings in place.

It makes no difference how much force is being applied between the stud and the plate.

Applying the markings directly to the lumber lends the entire process of adding markings to the lumber to automated printing processes in a manufacturing environment.

No manual labor is required at the construction site to apply the standard markings.

No time is required at the construction site for applying standard markings to the lumber.

Accordingly, the marked lumber of the invention, with the markings activated directly on the lumber substrate, defines new capability to operate in the strenuous and dirty, sometimes wet or damp, conditions typically extant at construction sites. No reference teaches or suggests a marking system which can so operate in such conditions, whereby the invention provides a new level of technical capacity not available, not obvious, from the references of record.

No Reference Teaches or Suggests a Bundle of Marked Lumber

Addressing separately Claims 1 and 65, and the claims dependent therefrom, applicant points out that Claims 1 and 65 are directed, not only to markings placed directly on a piece of lumber, but are further directed to such piece of lumber in a bundle of lumber. FIGURE 5 illustrates such bundle, held together by straps 28, one of which is shown in FIGURE 5. The Thomas reference discusses applying his tape markings prior to stud assembly. Within the context of the teaching of Thomas, there is at least the implication that applying the tape to the plates is done at the

construction site. Indeed, given the taught masking tape, one would not be able to prevent the tape from moving in the process of assembling a bundle, disassembling a bundle, handling the pieces of lumber after a bundle is opened. Thus, not only does Thomas not address marked lumber in a bundle, the Thomas teaching is not compatible with use in a bundle of lumber, whereby Thomas teaches away from the claimed invention.

Accordingly, in the context of Claims 1 and 65 to bundles of lumber, the Thomas reference is defeated as even more inoperable than when considering a single piece of lumber as in Claims 12 and 23. Thus, Claims 1 and 65 hold additional patentability, separate and distinct from any decision regarding patentability of independent Claims 12 and 23.

Alternate Claim 1

Since applicant has no indication from the examiner whether the amendment to Claim 1, faxed to the examiner on 08/07/02, has been entered, applicant has included at the end of the Appendix of Claims section, a presentation of Claim 1 as amended in the 08/07/02 amendment. Such amendment added the element of at least one strap securing the plurality of pieces of lumber together as said bundle." Simply stated, no reference of record teaches or suggests any strap in a bundle of lumber wherein at least one of the lumber pieces bears the taught stud-locator markings.

All Claims at Issue Are Patentable Over the References of Record

In view of the above arguments, applicant submits that all of Claims 1-30 (either version of Claim 1), and Claims 65-75, are patentable over all references of record.

IX. APPENDIX OF CLAIMS (37 CFR §1.192(c)(9))

1. A bundle of framing lumber product, comprising:

- (a) a plurality of elongate pieces of lumber operative to assist in layout and assembly of a wall, wherein such wall comprises a bottom plate and a top plate, and a plurality of dimension studs extending between the bottom plate and the top plate at one or more of a limited number of pre-determined stud spacings along the bottom plate and the top plate, wherein respective ones of said elongate pieces of lumber are operative for use in the bottom plate and/or the top plate, said respective elongate pieces of lumber having first and second ends and lengths therebetween, front surfaces and back surfaces, opposing sides extending between the front and back surfaces along the lengths thereof, and thickness dimensions between the front surfaces and the back surfaces, and between opposing sides thereof; and
- (b) a plurality of stud locator markings spaced along the lengths of said elongate pieces of lumber at one or more surfaces which assist in defining respective ones of the thickness dimensions of said elongate pieces of lumber, each said stud locator marking defining a position for placement, on the respective said elongate piece of lumber, of an end of a stud dimension lumber piece having opposing front and back surfaces and a thickness dimension therebetween, against the respective said elongate piece of lumber, the respective said stud locator markings on the respective said elongate pieces of lumber indicating the positions where the front and back surfaces of respective stud lumber pieces are to be placed against the respective said elongate piece of lumber,

the stud locator markings being spaced from each other along the lengths of said elongate pieces of lumber at at least one of the limited number of pre-determined stud spacings,

each of the plurality of stud locator markings comprising marking material deposited directly on the respective said elongate piece of lumber at a such respective surface which assists in defining a such thickness dimension of the respective said elongate piece of lumber.

2. A bundle of framing lumber product as in Claim 1, said stud locator markings on units of said framing lumber product being spaced at about 8 inches leading edge-to-leading edge.

3. A bundle of framing lumber product as in Claim 1, said stud locator markings on units of said framing lumber product being spaced at about 16 inches leading edge-to-leading edge.

4. A bundle of framing lumber product as in Claim 1, said stud locator markings on units of said framing lumber product being spaced at about 24 inches leading edge-to-leading edge.

5. A bundle of framing lumber product as in Claim 1, variations in spacing between said stud locator markings on a respective said framing lumber product, and between respective ones of said framing lumber products, being consistently no more than .13 inch leading edge to leading edge.

6. A bundle of framing lumber product as in Claim 1, including sets of 2 side-by-side stud locator markings arrayed along the lengths of respective units of said framing lumber product.

7. A bundle of framing lumber product as in Claim 1, respective units of said framing lumber product being substantially devoid of location marking indicators away from said stud locator markings.

8. A bundle of framing lumber product as in Claim 4, respective units of said framing lumber product being substantially devoid of location marking indicators except for said stud locator markings.

9. A bundle of framing lumber product as in Claim 1, said stud locator markings extending substantially across the full widths of units of said framing lumber product, said units of said framing lumber product being devoid of other marking indicators extending more than half way across the widths of the framing lumber products, whereby the stud locator markings can be readily visually distinguished from any such other markings by appearance differences which are not color differences.

10. A bundle of framing lumber product as in Claim 1, respective said stud locator markings having respective leading edge lines, trailing edge lines, and crossing lines between the leading and trailing edge lines.

11. A bundle of framing lumber product as in Claim 1, respective said stud locator markings having respective leading edge lines, trailing edge lines, and first and second crossing lines extending from respective leading edge lines to respective trailing edge lines.

12. A framing lumber product operative to assist in layout and assembly of a wall wherein such wall comprises a bottom plate and a top plate, and a plurality of dimension studs extending between the bottom plate and the top plate at one or more

of a limited number of pre-determined stud spacings along the bottom plate and the top plate, said framing lumber product comprising:

- (a) an elongate piece of lumber for use in one of the bottom plate and the top plate, said elongate piece of lumber having first and second ends and a length therebetween, a front surface and a back surface, opposing sides extending between the front and back surfaces along the length thereof, and thickness dimensions between the front surface and the back surface, and between opposing sides thereof; and
- (b) a plurality of stud locator markings spaced along the length of said elongate piece of lumber at one or more surfaces which assist in defining respective ones of the thickness dimensions, each said stud locator marking defining a position for placement, on said elongate piece of lumber, of an end of a stud dimension lumber piece having opposing front and back surfaces and a thickness dimension therebetween, against said elongate piece of lumber, said marking indicators on said elongate piece of lumber indicating the positions where the front and back surfaces of respective stud lumber pieces are to be placed against said elongate piece of lumber;

the plurality of stud locator markings being spaced from each other along the length of said elongate piece of lumber at at least one of the limited number of pre-determined stud spacings,

each of the plurality of stud locator markings comprising marking material deposited directly on said elongate piece of lumber at a such respective surface which assists in defining a such thickness dimension of the respective said elongate piece of lumber.

13. A framing lumber product as in Claim 12, said stud locator markings being spaced at about 8 inches leading edge-to-leading edge.

14. A framing lumber product as in Claim 12, said stud locator markings being spaced at about 16 inches leading edge-to-leading edge.
15. A framing lumber product as in Claim 12, said stud locator markings being spaced at about 24 inches leading edge-to-leading edge.
16. A framing lumber product as in Claim 12, variations in spacing between said stud locator markings being consistently no more than 0.13 inch leading edge to leading edge.
17. A framing lumber product as in Claim 12, including sets of 2 side-by-side stud locator markings arrayed along the length of said framing lumber product.
18. A framing lumber product as in Claim 12, substantially devoid of location marking indicators except for said stud locator markings.
19. A framing lumber product as in Claim 15, substantially devoid of location marking indicators except for said stud locator markings.
20. A framing lumber product as in Claim 12, said stud locator markings extending substantially across the full width of said framing lumber product, said framing lumber product being devoid of other marking indicators extending more than half way across the width of the framing lumber product whereby the stud locator markings can be readily visually distinguished from any such other marking indicators by appearance differences which are not color differences.

21. A framing lumber product as in Claim 12, a respective said stud locator marking having a respective leading edge line, a trailing edge line, and crossing lines between the leading edge line and the trailing edge line.

22. A framing lumber product as in Claim 12, a respective said stud locator marking having a respective leading edge line, a trailing edge line, and first and second crossing lines extending from the leading edge line to the trailing edge line.

23. A framing lumber product operative to assist in layout and assembly of a wall wherein such wall comprises a bottom plate and a top plate, and a plurality of studs extending between the bottom plate and the top plate at one or more of a limited number of pre-determined cooperating stud spacings along the bottom plate and the top plate, said framing lumber product comprising:

- (a) an elongate piece of lumber for use in one of the bottom plate and the top plate, said elongate piece of lumber having first and second ends and a length therebetween, a front surface and a back surface, opposing sides extending between the front and back surfaces along the length thereof, and thickness dimensions between the front surface and the back surface, and between opposing sides thereof; and
- (b) a plurality of stud locator markings spaced along the length of said elongate piece of lumber at one or more surfaces which assist in defining respective ones of the thickness dimensions, each said stud locator marking defining a position for placement, on said elongate piece of lumber, of an end of a stud dimension lumber piece having opposing front and back surfaces and a thickness dimension therebetween, against said elongate piece of lumber;

the plurality of stud locator markings being spaced from each other along the length of said elongate piece of lumber at at least one of the limited number of pre-determined stud spacings,

each of the plurality of stud locator markings comprising marking material deposited directly on said elongate piece of lumber at a such respective surface which assists in defining a such thickness dimension of the respective said elongate piece of lumber,

said elongate piece of lumber being generally devoid of marking indicators away from the stud locator markings.

24. A framing lumber product as in Claim 23, said stud locator markings being spaced at about 8 inches leading edge-to-leading edge.

25. A framing lumber product as in Claim 23, said stud locator markings being spaced at about 16 inches leading edge-to-leading edge.

26. A framing lumber product as in Claim 23, said stud locator markings being spaced at about 24 inches leading edge-to-leading edge.

27. A framing lumber product as in Claim 23, variations in spacing between said stud locator markings being consistently no more than 0.13 inch leading edge to leading edge.

28. A framing lumber product as in Claim 23, including sets of 2 side-by-side stud locator markings arrayed along the length of said framing lumber product.

29. A framing lumber product as in Claim 23, a respective said stud locator marking having a respective leading edge line, a trailing edge line, and crossing lines between the leading edge line and the trailing edge line.

30. A framing lumber product as in Claim 23, a respective said stud locator marking having a respective leading edge line, a trailing edge line, and first and second crossing lines extending from the leading edge line to the trailing edge line.

65. A bundle of framing lumber product, comprising:

- (a) an elongate piece of lumber having first and second ends and a length therebetween, a front surface and a back surface, opposing sides extending between the front and back surfaces along the length thereof, and thickness dimensions between the front surface and the back surface, and between opposing sides thereof; and
- (b) a plurality of stud locator markings spaced along the length of said elongate piece of lumber at one or more surfaces which assist in defining respective ones of the thickness dimensions of said elongate pieces of lumber, each said stud locator marking defining a position for placement, on the respective said elongate piece of lumber, of an end of a stud lumber piece having opposing front and back surfaces and a thickness dimension therebetween, to be joined to said elongate piece of lumber, the respective said stud locator markings on the respective said elongate piece of lumber indicating the positions where the stud lumber pieces are to intersect elongate piece of lumber,

The stud locator markings being spaced from each other along the length of said elongate piece of lumber at at least one of a limited number of pre-determined standard stud spacings,

each of the plurality of stud locator markings comprising marking material deposited directly on the respective said elongate piece of lumber at a such respective surface which assists in defining a such thickness dimension of the respective said elongate piece of lumber.

66. A framing lumber product as in Claim 65, said stud locator markings being spaced at about 8 inches leading edge-to-leading edge.

67. A framing lumber product as in Claim 65, said stud locator markings being spaced at about 16 inches leading edge-to-leading edge.

68. A framing lumber product as in Claim 65, said stud locator markings being spaced at about 24 inches leading edge-to-leading edge.

69. A framing lumber product as in Claim 65, variations in spacing between said stud locator markings being consistently no more than 0.13 inch leading edge to leading edge.

70. A framing lumber product as in Claim 65, including sets of 2 side-by-side stud locator markings arrayed along the length of said framing lumber product.

71. A framing lumber product as in Claim 65, substantially devoid of location marking indicators away from said stud locator markings.

72. A framing lumber product as in Claim 68, substantially devoid of location marking indicators away from said stud locator markings.

73. A framing lumber product as in Claim 65, said stud locator markings extending substantially across the full width of said framing lumber product, said framing lumber product being devoid of other marking indicators extending more than half way across the width of the framing lumber product whereby the stud locator markings can be readily visually distinguished from other marking indicators by appearance differences which are not color differences.

74. A framing lumber product as in Claim 65, a respective said stud locator marking having a respective leading edge line, a trailing edge line, and crossing lines between the leading edge line and the trailing edge line.

75. A framing lumber product as in Claim 65, a respective said stud locator marking having a respective leading edge line, a trailing edge line, and first and second crossing lines extending from the leading edge line to the trailing edge line.

Claim 1 as Submitted for Amendment on 08/07/02, Adds element (c)

1. A bundle of framing lumber product, comprising:

(a) a plurality of elongate pieces of lumber operative to assist in layout and assembly of a wall, wherein such wall comprises a bottom plate and a top plate, and a plurality of dimension studs extending between the bottom plate and the top plate at one or more of a limited number of pre-determined stud spacings along the bottom plate and the top plate, wherein respective ones of said elongate pieces of lumber are operative for use in the bottom plate and/or the top plate, said respective elongate pieces of lumber having first and second ends and lengths therebetween, front surfaces and back surfaces, opposing sides extending between the front and back surfaces along the lengths thereof, and thickness

dimensions between the front surfaces and the back surfaces, and between opposing sides thereof;

- (b) a plurality of stud locator markings spaced along the lengths of said elongate pieces of lumber at one or more surfaces which assist in defining respective ones of the thickness dimensions of said elongate pieces of lumber, each said stud locator marking defining a position for placement, on the respective said elongate piece of lumber, of an end of a stud dimension lumber piece having opposing front and back surfaces and a thickness dimension therebetween, against the respective said elongate piece of lumber, the respective said stud locator markings on the respective said elongate pieces of lumber indicating the positions where the front and back surfaces of respective stud lumber pieces are to be placed against the respective said elongate piece of lumber; and
- (c) at least one strap securing said plurality of elongate pieces of lumber together as said bundle,

the stud locator markings being spaced from each other along the lengths of said elongate pieces of lumber at at least one of the limited number of pre-determined stud spacings.

A check for the fee of \$160.00 required under 37 CFR §1.17(f) is attached herewith. No other fee is believed to be due. However, if any other fee is due, or if any fee submitted herewith is deficient, or is missing, kindly charge any such deficiency, or credit any refund, to deposit account 23-2130.

29462

Respectfully submitted,
Fred Christian Baij

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